The College of Optometrists

Welcome to our webinar

Orthoptics for the busy optometrist

Interactive CET point

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22 January 2020

How to ask questions

Interactive CET point

• Answer min four poll questions
• Remain in webinar for at least 50 mins
• Complete feedback form

DISCLOSURE

• Paid lectures & KOL/product feedback programmes:
  - Alcon, American Academy of Optometry (UK), Association of Optometrists, Birmingham Focus on Blindness, Black & Lizars, Central (LOC) Fund, Cerium Visual Technologies, College of Optometrists, Coopervision, ESRC, General Optical Council (UK), Institute of Optometry, Iskra Fund, Johnson & Johnson, Leightons, London Vision Clinic, MRC, Norville, Optos, Paul Hamlyn Trust, Perceptive, Scrivens, Specsavers, Thomas Pocklington Trust
• Author of Pickwell’s Binocular Vision Anomalies, editions 3-5
• i.O.O. Sales Ltd markets IFS orthoptic exercises, which the speaker designed, and for which he receives a small royalty
• Director of a community optometric practice in Brentwood, Essex

PLAN

INTRODUCTION
INVESTIGATION OF INCOMITANCY
INVESTIGATION OF HETEROPHORIA
INVESTIGATION OF HETEROTROPIA
TREATMENT
CONCLUSIONS

Submit poll

For regular tweets on optometric research:
@BruceEvansUK
OVERVIEW: CAVEAT

- >5% of patients seeing community optometrists have BV problems
- Always look for pathology.
  - Neuro-optometric checks
  - Pupils, disc, fields, strabismus, incomitancy, accommodation
- Check these things regularly
- Don’t forget refraction
- Change management if not improving significantly
- Refer if still not improving
- Appropriate re-exam intervals (frequent)

Poll question 1

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Full handout of slides from www.bruce-evans.co.uk

Poll question 2

CAUSES OF INCOMITANCIES

VASCULAR
- Diabetes
- Hypertension
- Stroke
- Aneurysms

NEUROLOGICAL
- Tumours
- Multiple sclerosis
- Myasthenia gravis
- Migraine
- Temporal arteritis

OTHER
- Trauma
- Thyrotoxicosis
- Toxic
- Iatrogenic
- Idiopathic

Underlined = more likely in elderly

Motility test

- Use reliable pen torch
- Check nose not occluding
- Really, three tests, so do three times:
  1) Observe corneal reflexes
  2) Cover test in peripheral gaze
  3) Ask about diplopia
- Beware of reports of diplopia
- May break down (in view of target, distance, fus. res.)
- May be variable
- May be confused
- Know the muscle actions (RADSIN)
**Incomitancies: the bottom line**

- Some incomitancies are difficult to detect
- If symptoms are suspicious, do cover testing in peripheral gaze
- Testing for cyclo-deviations detects SO palsies
- Refer new or changing incomitancies
- In some long-standing cases, prescribing the prism required in the primary position may help

**Signs of decompensated phoria**

- **Symptoms**
- **Poor cover test recovery**

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**PLAN**

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KEY SIGNS OF DECOMP. PHORIA

- Symptoms
- Poor cover test recovery
- Aligning prism (FD test)
  - Low fusional reserve opposing phoria
  - Sheard’s criterion
  - Particularly useful for exophorias
- For esophorias, size and imbalanced fusional reserves are relevant
- For hyperphorias, size matters

ALIGNING PRISM: Mallett Unit

- Maintain normal binocular vision
  - Increase lighting, full field of view
  - Use hand held loose prisms
  - Minimum prism for alignment
  - Re-normalise BV between prisms
  - Prism dioptre steps: 0.5, 1.0, 2.0, 4.0
- Sensitivity 75%
- Specificity 78%
- Karanis & Evans (2006)
- Jenkins, Pickwell, & Yekta (1989)

STEREOTESTS

www.bernell.com

Poll question 3
TREATMENT OF AMBLYOPIA (a)

- Flow chart based on review of recent RCTs in Evans et al. (2011; OPO)
- Many cases of amblyopia can be cured by refractive correction alone;
  - 20% don’t need occlusion (Edison, 1955; Pickwell, 1984; Stewart et al., 2004; West & Williams, 2011)
  - Contact lenses are likely to be best in anisometropia
- Many cases never require full-time occlusion
  - If 6/9 to 6/25, 2h occ. ≡ 6h
  - If ≤ 6/30, 6h > 2h
- Avoid full time occlusion for orthotropic anisometropia
- Timings approximate
- See patients frequently during the treatment of amblyopia, to begin with every 4-6 weeks

Poll question 5

MOTOR DEVIATION:
REFRACTIVE CORRECTION

- Mandatory in accommodative esotropia
- Also possible to treat convergence excess with multifocals & exo-deviations with negative lenses
- Limited by 4 factors
  - Angle of deviation
  - Refractive error
  - Accommodation
  - AC/A ratio
- Determine sphere that eliminates strabismus (no diplopia)
- Elimiates FD on Mallett Unit
- Prescribe, try to reduce approx. every 3-6/12
- Negative adds (Chen et al., 2016) and bifocals/varifocals can work well

MOTOR DEVIATION:
PRISMATIC CORRECTION

- Preferred treatment in small/moderate vertical deviations
- May also help in small/moderate horizontal deviations if not amenable to refractive modification or exercises
- Limited by angle of deviation / cosmesis of prism

MOTOR DEVIATION:
CASE STUDY: D1542

- 11/5/96, female, age 8y, 1 headache a fortnight
  - Wearing full cyclo plus (c. +2.00, R=L)
  - Cover test: D: 8
  - S: 8
  - RSOT with +2.50 add: N ortho

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MOTOR DEVIATION:
SPECIFICS

- Preferred treatment in small/moderate vertical deviations
- May also help in small/moderate horizontal deviations if not amenable to refractive modification or exercises
- Limited by angle of deviation / cosmesis of prism
MOTOR DEVIATION: PRISMATIC CORRECTION SPECIFICS

- determine prism that
  - eliminates strabismus (no diplopia)
  - eliminates FD on Mallett Unit

MOTOR DEVIATION: FUSIONAL RESERVE EXERCISES

OVERVIEW

- preferred treatment in small/moderate horizontal deviations, if px cooperative
- Work well in those aged 11-19y, even if strabismic (Pickwell & Jenkins, 1982)
- in exo-deviations improve ability to converge
- in eso-deviations improve ability to diverge
- try to assess progress using a method different to the treatment technique
- mixed evidence from RCTs
  - Scheiman & Gwiazda (2011) - intensive exercises better than push-up
  - CITT-ART trial – intensive exercises improve NPC & fusional reserves, but no symptoms (CISS) or reading

CONVERGENCE INSUFFICIENCY SPECIFICS

- Treatments (in order of increasing complexity)
  - simple push up (bead on string if very remote)
  - jump convergence
  - push up with physiological diplopia
  - jump convergence with physiological diplopia
  - programme of exercises (e.g., Institute Free-space Stereograms)
- RCT shows intensive programme of exercises better than home push-up (Scheiman et al, 2005)
- results may be attributable to dose effect
- “Whether synoptophore or jump vergence stereocards are used...the critical variable is the length of time it is maintained” (Vaegan, 1979)
- “Convergence exercises independent of accommodation were the most effective treatment” (Horwood & Toor, 2014)
- See standard textbooks for details on exercises (e.g., Pickwell’s Binocular Vision Anomalies)

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SYMPTOMS
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Thank you
Thank you to everyone who attended, and all those who submitted a question this evening.
A recording of this webinar and the follow-up podcast will be available on the College’s website soon.

FEEDBACK AND CET

FEEDBACK
Your feedback helps us plan future member events.
Let us know what you thought about this session at www.college-optometrists.org/BruceEvans-Feedback

NEXT WEBINAR
How to recognise diabetic retinopathy and manage your patients – 19 March 2020
https://www.college-optometrists.org/Webinar-DiabeticRetinopathy

An email containing these links will be sent to you within the next hour.